


# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PC554DR ✓	<b>FOR FURTHER ACTION</b> See Form PCT/PEA/416	
International application No. PCT/IB2005/051145 ✓	International filing date (day/month/year) 07.04.2005 ✓	Priority date (day/month/year) 09.04.2004 ✓
International Patent Classification (IPC) or national classification and IPC INV. G01N1/22		
Applicant BRUZZI, Domenico ✓		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 17 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>		
Date of submission of the demand  08.02.2006	Date of completion of this report  10.07.2006	
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Timonen, T Telephone No. +49 89 2399-5666	



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/IB2005/051145

**Box No. I Basis of the report**

1. With regard to the **language**, this report is based on
  - ☒ the international application in the language in which it was filed
  - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
    - ☐ international search (under Rules 12.3(a) and 23.1(b))
    - ☐ publication of the international application (under Rule 12.4(a))
    - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

**Description, Pages**

6, 7, 10	as originally filed ✓
1, 2, 2a, 3-5, 8, 9, 11	received on 08.02.2006 with letter of 08.02.2006 ✓

**Claims, Numbers**

1-13	received on 08.02.2006 with letter of 08.02.2006 ✓
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**Drawings, Sheets**

2/4-4/4	as originally filed ✓
1/4	received on 08.02.2006 with letter of 08.02.2006 ✓

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
    - ☐ the description, pages
    - ☐ the claims, Nos.
    - ☐ the drawings, sheets/figs
    - ☐ the sequence listing (*specify*):
    - ☐ any table(s) related to sequence listing (*specify*):
  4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
    - ☐ the description, pages
    - ☐ the claims, Nos.
    - ☐ the drawings, sheets/figs
    - ☐ the sequence listing (*specify*):
    - ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-13
	No: Claims	
Inventive step (IS)	Yes: Claims	1-13
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-13
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

1. Reference is made to the following documents:

- D1: GB-A-1 445 061 (BECKMAN INSTRUMENTS INC) 4 August 1976 (1976-08-04)
- D2: US-A-4 336 722 (SCHWEITZER ET AL) 29 June 1982 (1982-06-29)
- D3: DE 44 30 378 A1 (ERWIN SICK GMBH OPTIK-ELEKTRONIK, 79183 WALDKIRCH, DE) 29 February 1996 (1996-02-29)
- D4: CA-A1-2 196 846 (GOODFELLOW TECHNOLOGIES INC) 5 August 1998 (1998-08-05)
- D5: US-A-3 938 390 (GREY ET AL) 17 February 1976 (1976-02-17)

**RE Item V**

**Observations pursuant to Article 33(2) PCT and 33(3) PCT**

2. Document D1 discloses a system for extracting a gaseous fluid to be analysed from a process environment, comprising
- a probe (12) for extracting said gaseous fluid, comprising a first tubular element (10), which can be positioned within the interior of the process environment (11), the said first tubular element having at one end a gas aspiration opening and defining an internal cavity, and a second tubular element (21) extending within the cavity of the first tubular element, the said second tubular element being operable to inject the said gaseous fluid into the interior of the cavity towards the said aspiration opening of the first tubular element and from there again into the process environment,
  - aspiration means (13, 14) for aspirating the gaseous fluid from the process environment through the cavity of the said first tubular element of the probe,
  - take-off means (16, 18, 19) connected to the said aspiration means for taking-off a fraction of the said gaseous fluid, the said take-off means being further connected to analyser means (17) for analysis of the said gaseous fluid,
  - re-injection means (14, 21) for re-injecting the said gaseous fluid into the process environment through the second tubular element, see Figure 1.

The subject-matter of claim 1 differs from that disclosed in the closest prior art D1

through features of its characterising portion, especially in defining the details of the aspiration and re-injection means and in defining the connections, the valve (EVG2) and reservoir (SG2) constituting the back-washing the system.

Accordingly, the subject-matter of claim 1 is new in the sense of Article 33(2) PCT.

The above-mentioned difference addresses the technical problem of ensuring the cleanliness of the sampling system while avoiding contamination of the sample.

Document D1 also addresses the above-mentioned problem. The solution, ie. re-injecting the sampled gaseous fluid to prevent particles from entering, however, does not provide for cleaning of the sampling probe and lines. Documents D2-D5 disclose systems with similar probe structures having means for re-injecting the gas into the process. In document D2 the re-injection is made in order to purge certain parts of the system, but back-washing of the sampling probe and lines with the sampled gaseous fluid has neither been mentioned nor hinted at. Furthermore, the cleaning of sampling structures by back-washing or blowback, ie. by directing fluid therethrough in a reverse direction, is well known in the art. However, this blowback is typically made with air or an inert gas, which could lead to contamination or loss of representativeness of the sample.

Accordingly, the person skilled in the art could not end up with the subject-matter of claim 1 merely by following the teaching of the prior art, nor by combining the features known from the documents forming the prior art.

Accordingly, the subject-matter of claim 1 would appear to be inventive in the sense of Article 33(3) PCT.

- 2.1 Independent claim 12 defines a method equivalent to the system of claim 1, including the inventive feature of accumulating the sampled gas for later use in back washing. Accordingly, the above comments pursuant to Article 33(2) PCT and Article 33(3) PCT apply *mutatis mutandis* to the subject-matter of claim 12.